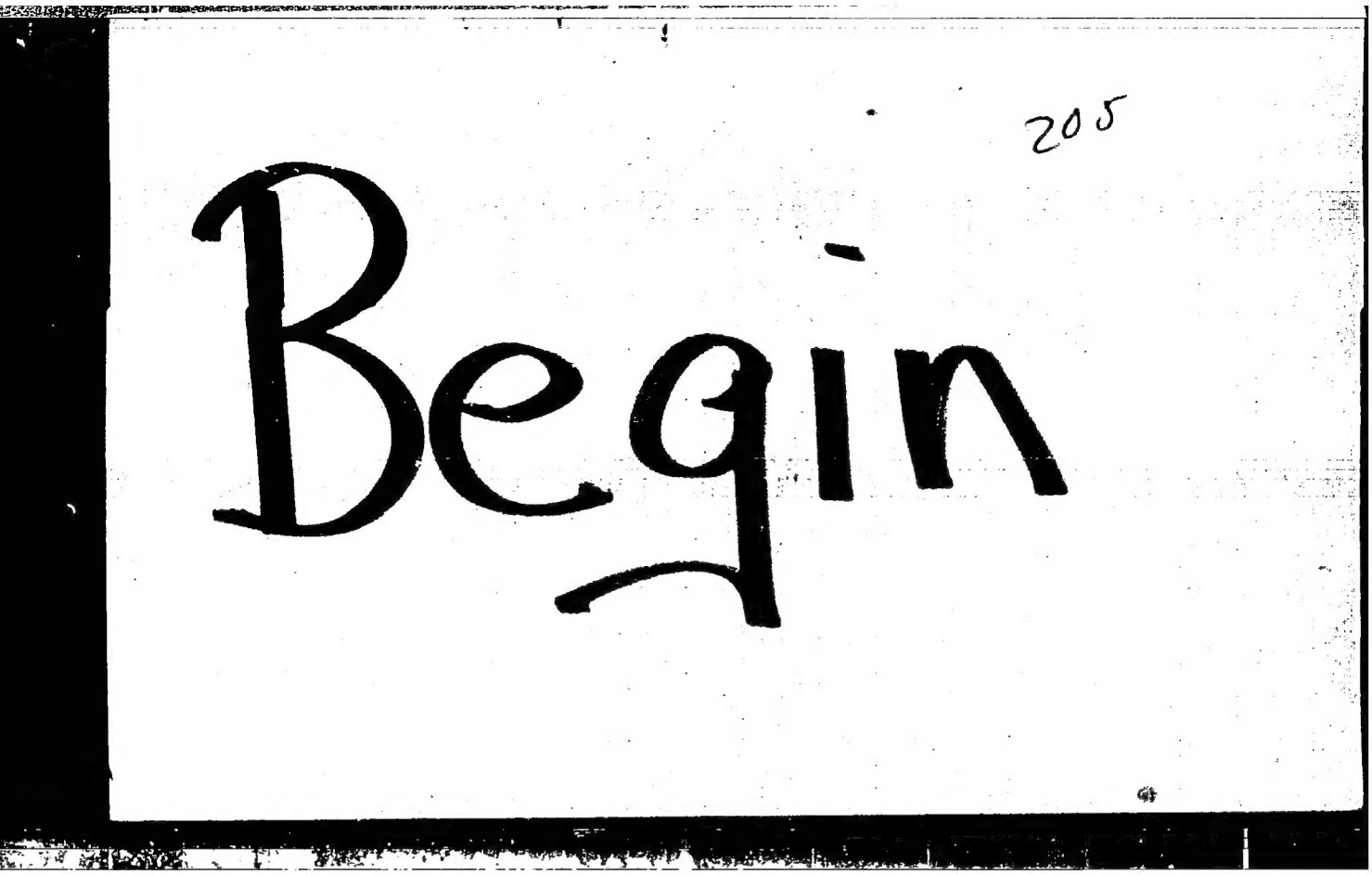
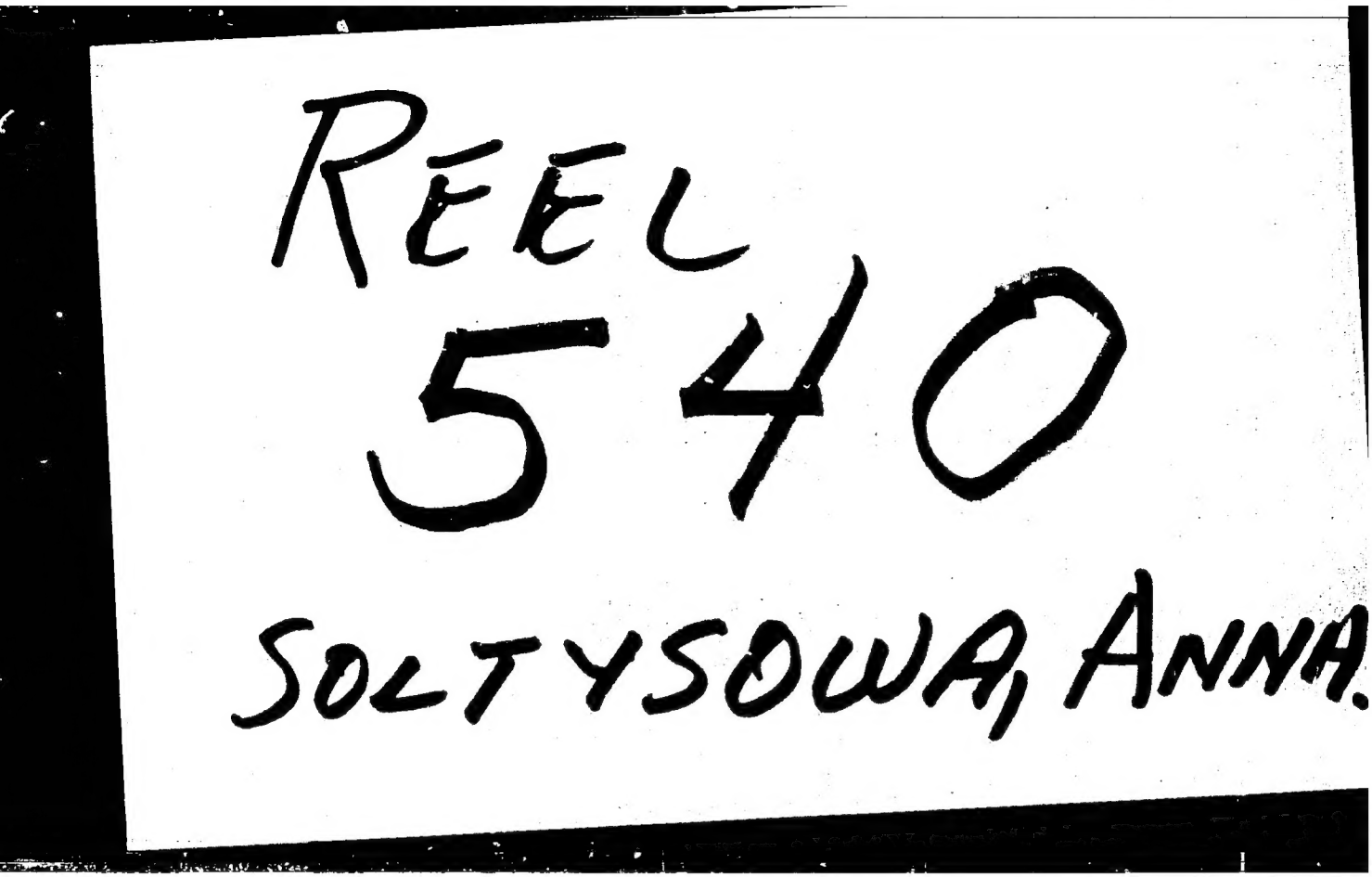




BURDZINSKA, Jadwiga; NOWAKOWSKI, Tadeusz, K.; SOLTYSOWA, Anna

A case of Fanconi's pancytopenia related to the Chediak-Higashi syndrome. Ped. Pol. 39 no.11:1327-1333 N '64

1. Z I Kliniki Pediatrycznej Akademii Medycznej we Wroclawiu (Kierownik: prof. dr. med. T.K.Nowakowski).

SOLUBOV, N.P., kand. tekhn. nauk; DUMANSKAYA, V.A., kand. tekhn. nauk

Milling ingot molds. Mashinostroenie no.5:56-57 S-O '64
(MIRA 18:2)

[redacted], A. M., [redacted], P. I.

Cement

Reaction between kaolin and $CaCO_3$ and production of white cement. Dokl. Ak SSSR [illegible], No. 5, 1952.

Monthly List of Russian Accessions, Library of Congress
December 1952. UNCLASSIFIED.

ZYUZIN, N.T., KOLYCHEV, N.N., SOLUKHA, A.K.

E.B. Rabkin's pigment tables for investigating acquired disorders in color sensation. Probl.fiziol.opt. 12:497-499 '58 (MIRA 11:6)

1. Kafedra oftalmologii Voyenno-meditsinskoy akademii ordena Lenina im. S.M. Kirova.
(COLOR BLINDNESS)
(OPTICS--TABLES, ETC.)

Calculating the pulsations of gas bubbles in an incompressible liquid under periodically varying pressure. Akust. zhur. 10 no.1:34-39 '64. (MIRA 17:5)

1. Institut gidrodinamiki Sibirskogo otdeleniya AN SSSR, Novosibirsk.

SOLUKHIN,V.

Along the Albanian riviera. Vokrug sveta no.8:18-23 Ag'55. (MLRA 8:12)
(Albania--Description and travel)

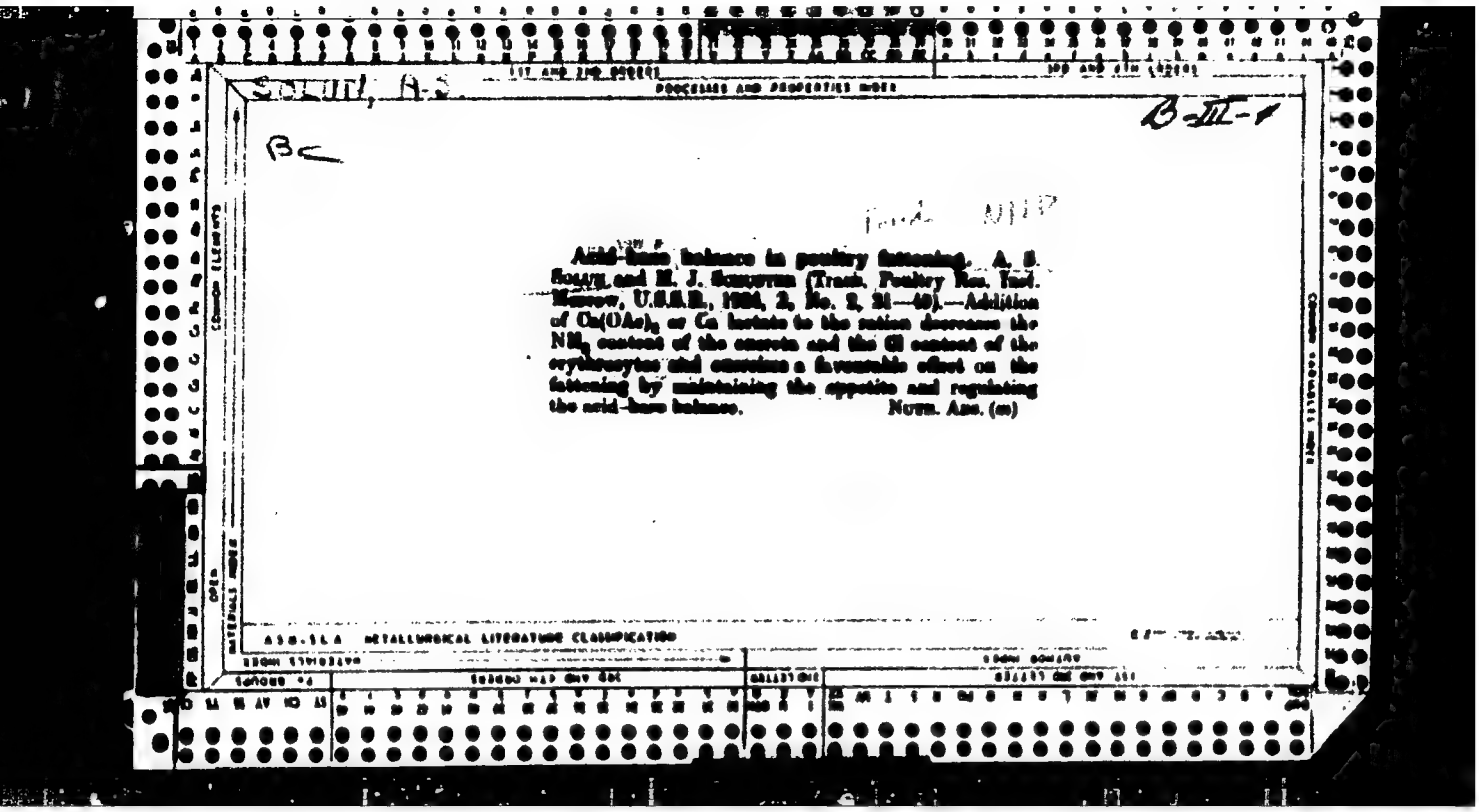
SOLOKVADZE, G.M.

Continuous to tracking technique in the reflected wave method.
Razved. i prom. geofiz. no.48:6-8 '63 (MIRA 18:1)

MOTYAKHOV, M.A., inzh.; SOLUKVADZE, V.S., inzh.; SEMENIKHIN, A.G., inzh.

Cleaning hot-rolled metal with a stiff metal brush. Svar. proizv. no.10:40-41 O '63. (MIRA 16:11)

1. Moskovskiy zavod po obrabotke tsvetnykh metallov (for Motyakhov). 2. Vsesoyuznyy nauchno-issledovatel'skiy institut tverdykh splavov (for Sokukvadze). 3. Vsesoyuznyy nauchno-issledovatel'skiy i proyektno-tekhnologicheskiy institut ufol'nogo mashinostroyeniya (for Semenikhin).

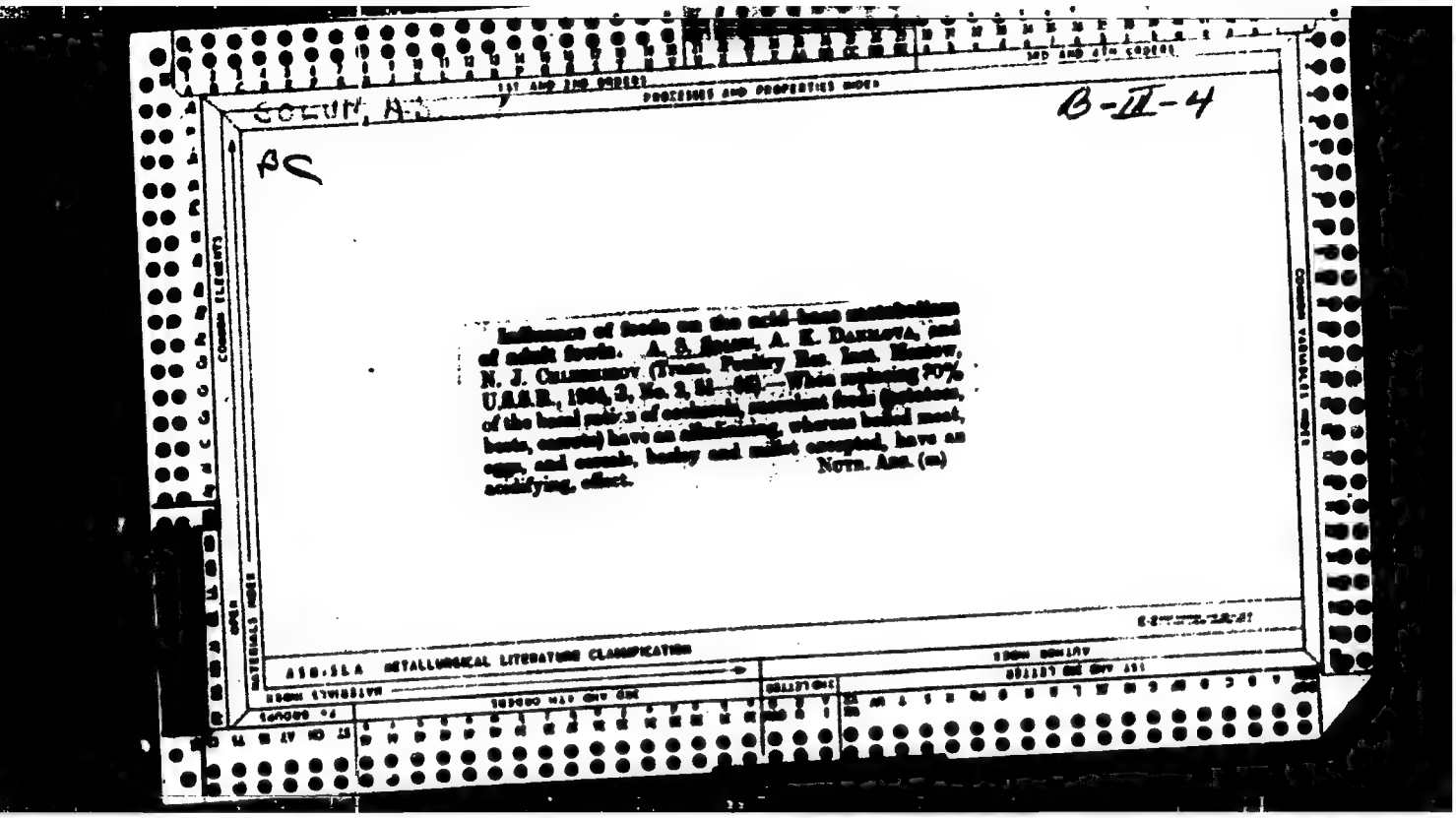


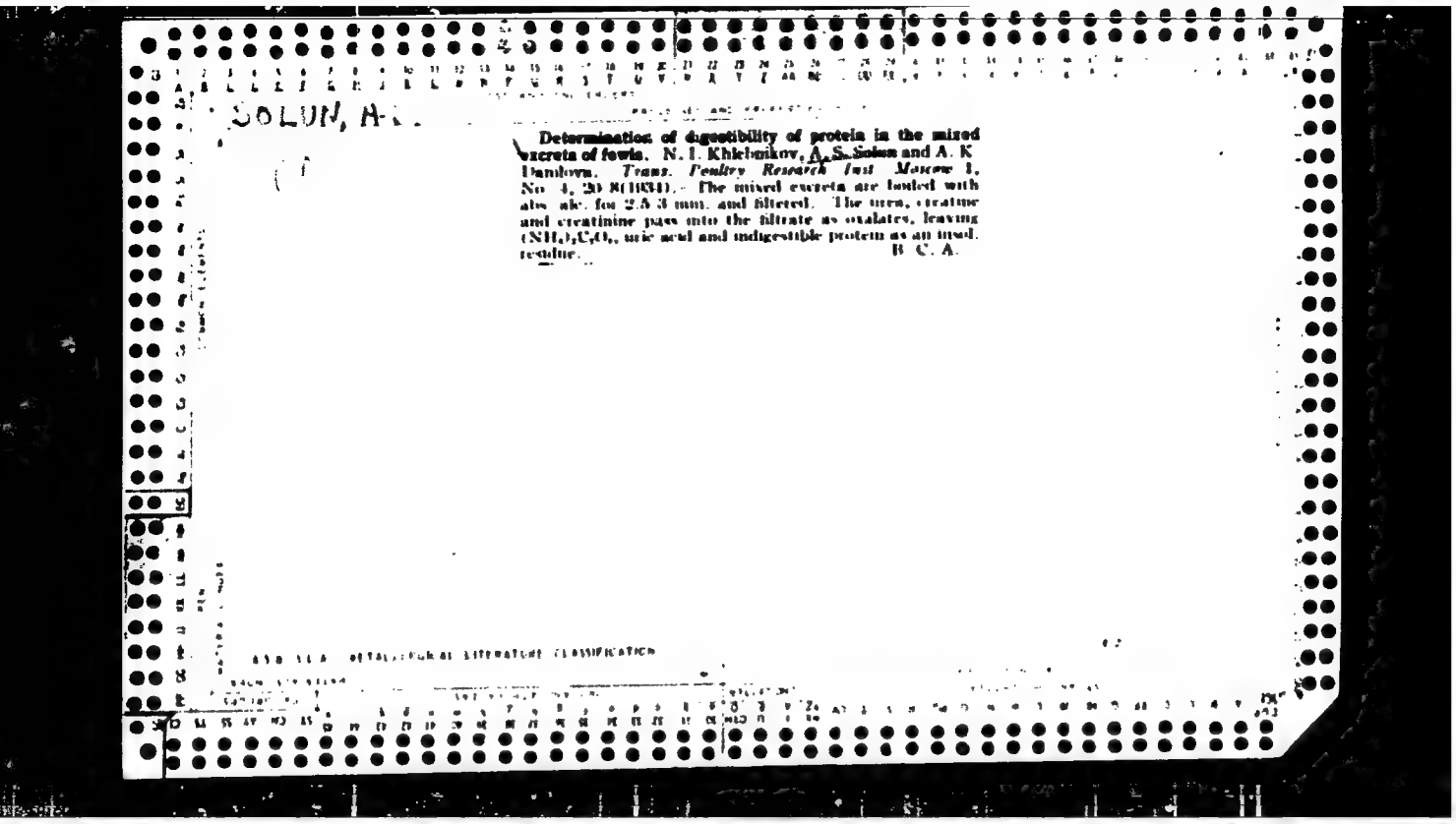
SOLUTI, A.S.

B-III-1

Acid-base balance in poultry fattening. A. S. Solutí and M. J. Semerova (Trans. Poultry Res. Inst. Moscow, U.S.S.R., 1954, 2, No. 2, 31—40).—Addition of $Cu(OAc)_2$ or Co lactate to the ration decreases the NH_3 content of the excreta and the Cl content of the erythrocytes and exercises a favourable effect on the fattening by maintaining the appetite and regulating the acid–base balance. Nutr. Abs. (m)

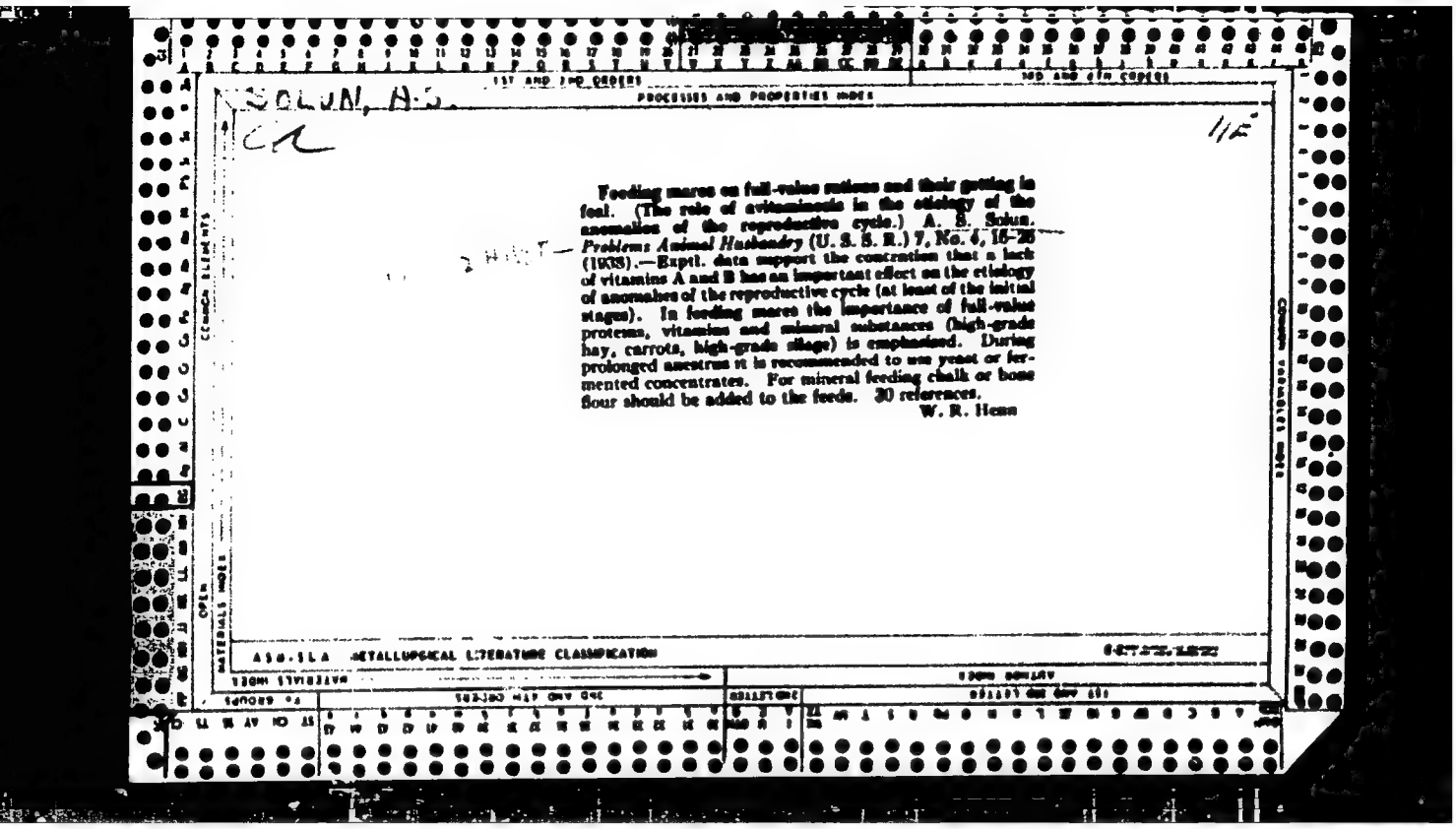
A.S.B.-I.L.A. METALLURGICAL LITERATURE CLASSIFICATION





SOLUN, A.

Determination of digestibility of protein in the mixed excreta of fowls. N. I. Khlebnikov, A. S. Solun and A. K. Danilova. *Trans. Poultry Research Inst. Moscow* 1, No. 4, 20-8(1934).—The mixed excreta are boiled with abs. alc. for 2.5-3 min. and filtered. The urea, creatine and creatinine pass into the filtrate as oxalates, leaving $(NH_4)_2C_2O_4$, uric acid and indigestible protein as an insol. residue. B. C. A.



SOLUN, A. S.

CA

11F

Feeding mares on full-value rations and their getting in foal. (The role of avitaminosis in the etiology of the anomalies of the reproductive cycle.) A. S. Solun. *Problems Animal Husbandry* (U. S. S. R.) 7, No. 4, 16-26 (1938).—Exptl. data support the contention that a lack of vitamins A and B has an important effect on the etiology of anomalies of the reproductive cycle (at least of the initial stages). In feeding mares the importance of full-value proteins, vitamins and mineral substances (high-grade hay, carrots, high-grade silage) is emphasized. During prolonged anestrus it is recommended to use yeast or fermented concentrates. For mineral feeding chalk or bone flour should be added to the feeds. 30 references.

W. R. Hess

A58-51A METALLURGICAL LITERATURE CLASSIFICATION

[illegible], A. .

Solun, A. .. - "Rich feeding - the principal measures in the struggle against sterility," In the symposium: Bor'ba s besplodiyem s.-kh. zhivotnykh, Moscow, 1949 (on cover: 1948), p. 28-35

SO: U-4355, 14 August 53, (Letopis 'Zhurnal 'nykh Statey, No. 15, 1949.)

SOLOV, A.S.

25872. SOLOV, A.S. Fiziologicheskaya polnotsennost' ratsionov i rezistentnost' vysokoproduktivnykh zhivotnykh. Sov. zootekhniya, 1949, No 4, S. 70-75

SO: Letopis' Zhurnal'nykh Statey, Vol. 34, Moskva, 1949

SOLUN, A. S., Prof.

SOLUN, A. S.: (Professor) and
MELYUKOV, A. N.: (Assistant, Moscow Veterinary Academy).
"Rationalization of the feeding of highly productive milk animals on the farms of a surburban zone."
SO: HYGIENE OF AGRICULTURAL ANIMALS, Proceedings of the XXIX Plenum of the Veterinary Section of the Academy, P. 42, Moscow 1950, Trans. 151, by L. Lulich.

uncl

SOLUN, A. S., Prof. and MELYUKOV, A. N.,
Moscow Vet. Academy
"Rationalization of feeding highly productive milk cattle."
SO: Vet. 27 (10) 1950, p. 34

1. [illegible], A. I.

2. USSR (600)

4. Fodder and Fodder Stuffs; Prof.

7. Net-sliced cages for efficient standardized feeding of farm animals. Sov. zootekh. 7 No. 4, 1952.

9. Monthly List of Russian Accessions, Library of Congress, June 1952. Unclassified.

SOLUN, Prof A.S.; DOMRACHEV, Prof G.V.; ZAYTSEV, Prof. VI.

Dairy Cattle

Prevention of Mineral and vitamin deficiencies in highly productive cows. Sov. zootekh.7 no.7, 1952. Moskovskaya Veterinarnaya Akademiya

SO: Monthly List of Russian Accessions, Library of Congress, Sept. '52. 1953, Uncl.

SOLUN, A.S.

Avitaminoses of domestic animals, characteristics of their manifestation, and preventive measures. Vit.res.i ikh isp. no.2:76-88 '54. (MIRA 8:10)

1. Moskvoskaya veterinarnaya akademiya.
(Deficiency diseases in domestic animals)

SOLUN, A.S., professor.

Corn, the most important feed. Veterinariia 32 no.10:69-73 O '55. (MLRA 8:12)

1.Moskovskaya veterinarnaya akademiya.
(CORN (MAIZE))

SOLUN, A.S.

Vitamin A and D deficiency and hypovitaminoses in highly productive cows and their prophylaxis. Vitaminy no.2:197-203 '56. (MLRA 10:8)

1. Moskovskaya veterinarnay akademiya
(DEFICIENCY DISEASES IN ANIMALS)
(COWS--DISEASES AND PESTS)
(VITAMINS)

USSR / Farm Animals. Rabbits U-7

Abs Jour : Ref Zhur - Biologiya, No 16, 1957, 72123

Author : Solun, A.S., Roizman, P.S.
Title : The Role of Cobalt in the Feed of Fur Rabbits.

Orig Pub : Tr. Mosc. Vet. Akad., 1956, 11, 218-235

Abstract : Supplementing the Food with $CoCl_2$ had a favorable effect on the rabbits; improved the nitrogen assimilation, and that of P and Ca; affected an increase in their live weight, fertility and and increase in offsprings; increased the quantity of fur growth and its whiteness, shininess, thickness and length; increased organic resistance, and decreased mortality. The authors suggest the cobalt administration in the breeding of down-rabbits in ash-containing sandy and semi-sandy soils and recommend doses of 0,7 to 1 mg $CoCl_2.6H_2O$ per week (per head).

Card : 1/1 - 41 -

SOLUN, A.S., professor.

Tasks of veterinary diagnostic laboratories in studying the causes of diseases in domestic animals. Veterinariia 33 no.11:52-55 N '56.

1. Moskovskaya veterinarnaya akademiya.
(Diseases--Causes and theories of causation)
(Veterinary laboratories)

USSR/Farm Animals. Small Horned Cattle Q-3

Abs Jour : Ref Zhur - Biol., No 11, 1958, No 49989

Author : Solun, A.S.
Inst :
Title : The Principles in the Standardization of Dairy Cattle Foods.

Orig Pub : Vestn. s.-kh. nauki, 1957, No 4, 98-105

Abstract : In view of the frequently observed metabolism disturbances in high-yield cows caused by poor quality feeds, it is recommended that a stricter supervision of primary stages of diseases be observed, and also that supplementary vitamin and mineral enrichment of feeds be introduced.--F.M. Kazantsev.

Card : 1/1

24

Orig Pub : Mosk. Kolkhoznik, 1957, No 8, 24-25

Abstract : No abstract

Card : 1/1

25

SOLUN, Abram Savel'yevich; ROMANOVICH, Ye.F., red.; SOKOLOVA, N.N., tekhn.red.

[High-value feed rations for dairy cattle] Polnotsennoe kormlenie molochnogo skota. Moskva, Gos.izd-vo sel'khoz. lit-ry, 1958. 285 p. (MIRA 12:7)
(Dairy cattle--Feeding and feeds)

Country :
CATEGORY : Farm Animals. General Problems.

ABS. JOUR. : RZBiol., No. 4, 1959, No. 16594

AUTHOR : Solun, A. S.; Dantsig, N. M.; Sokolov, N. V.
INST. :
TITLE : New Ultraviolet Sources for the Irradiation of Animals.

ORIG. PUB. : Zdivotnovodstvo, 1958, No 4, 27-31

ABSTRACT : As a result of investigations lasting for three years it was established that irradiation with UF, EUV-15, and RVE-350 lamps produces a positive effect upon the physiological state as well as the productivity of animals. Shedding in cows which were subjected to irradiation, took place earlier and proceeded more intensively, in the course of 3 years they increased their milk yield 15.7 percent, while controls increased their milk yield by only 7.2 percent; the

CARD: 1/4

ABS. JOUR. : RZBiol., No. 4, 1959, No. 16594

AUTHOR :
INST. :
TITLE :

ORIG. PUB. :

ABSTRACT : average daily weight gain in calves amounted to 734 gr as compared to 615 gr in controls, in weaned piglets the weight gain amounted to 490 gr for a period of 3 months as compared to 390 gr in controls, the egg production of chicken increased by 22 percent when they were irradiated by the RVE-350 lamps. In the winter the amounts of Ca, P, albumin and Hb and the condition of bone tissue were normal in the blood of irradiated cows and

CARD: 2/4

SOLUN, Abram Savel'yevich, prof.; BENYUMOV, O.M., red.; SAVCHENKO, Ye.V., tekhn.red.

[New data on the feeding of dairy cattle] Novoe v kormlenii molochnogo skota. Moskva, Izd-vo "Znanie," 1959. 31 p. (Vsesoiuznoe obshchestvo po rasprostraneniiu politicheskikh i nauchnykh znanii. Ser.5. Sel'skoe khoziaistvo, no.13) (MIRA 12:5)
(Dairy cattle--Feeding and feeds)

BAKHIREV, N.F., kand. tekhn. nauk; GAVANIN, V.A., inz.; DANTSIG, N.M.; KODINETS, G.A., prof.; MELYUKOV, A.N., kand. sel'khoz. nauk; PIGAREV , N.V., doktor sel'khoz . nauk; OSETROV, P.A., kand. tekhn. nauk; SVENTITSKIY, I.I., kand. tekhn. nauk; SOKOLOV, M.V., doktor tekhn. nauk; SOLUN, A.S., doktor sel'khoz.nauk; SHARABRIN, I.G., doktor bet. nauk; SKOBELEV, V.M., kand. tekhn. nauk; TIRKEL'TAUB, M.V., inzh.; KOLPAKOVA, Ye.A., red.izd-va; YEPIFANOVA, L.V., tekhn. red.; SIMKINA, G.S., tekhn. red.

[Recommendations for ultraviolet irradiation of farm animals and fowl]Rekomendatsii po ul'trafioletovomu obluchen iiu sel'-skokhoziaistvennykh zhivotnykh i ptits. Moskva, Izd-vo Akad. nauk SSSR, 1962. 46 p. (MIRA 16:2)

1. Akademiya nauk SSSR. Institut biologicheskoy fiziki. Sektsiya po ul'trafioletovomu izlucheniyu.
(Ultraviolet rays—Physiological effect)
(Stock and stockbreeding)

SOLUN, A.S., prof.

The most outstanding representative of zootechnicians. Zhivotnovodstvo 24 no.5:95-96 My '62. (MIRA 16:10)

SOLUN, ...; SOLUN, K.S.

In memory of Iraida Trofimovna Gancheva, 1903 - ; Lab. delo no.2: (63 '65. (MIRA 18:2)

SOLUN, E.M.

Instructing nurses about the rules for sending material to laboratories. Lab.delo no.3:29-30 My-Je '55. (MLRA 8:8)
(LABORATORIES, MEDICAL,
rules in direction of material to laboratory)

SOLUN, M.N.

Fat metabolism in various phases of atherosclerosis. Kardiologiia 2 no.4:46-52 Jl-Ag '62. (MIRA 15:9)

1. Iz kafedry gospital'noy terapii lechebnogo fakul'teta (zav. - prof. L.S.Shvarts) Saratovskogo gosudarstvennogo meditsinskogo instituta.

(ARTERIOSCLEROSIS) (FAT METABOLISM)

SOLUN, M.N.

Disorders in fat metabolism in patients with myocardiac infarct. Vrach. delo no.7:34-37 Jl'63. (MIRA 16:10)

1. Kafedra gospital'noy terapii (zav. - prof. L.S.Shvarts) lechebnogo fakul'teta Saratovskogo meditsinskogo instituta.
(LIPID METABOLISM) (HEART—INFARCTION)

SOLUN, M.N. (Saratov)

Some characteristics of fat metabolism in atherosclerosis.
Klin. med. 41 no.6:123-127 Je '63. (MIRA 17:1)

1. Iz kafedry gospital'noy terapii lechebnogo fakul'teta (zav. - prof. L.S. Shvarts) Saratovskogo meditsinskogo instituta.

SOLUN, N.S. (Saratov)

Activities of clinical diagnostic laboratories in district and rural hospitals in the Saratov Province. Sov. zdrav. 13 no.5:43-44 S-O '54. (MLRA 7:12)

(LABORATORIES, MEDICAL,
in Russia, diag. laboratories in regional & rural hosp.)
(HOSPITALS,
diag. laboratories in regional & rural hosp. in Russia)

SOLUN, M.S.

Work of the Saratov branch of the All-Union Society of Laboratory Physicians. Lab.delo no.6:29 N-D '55. (MIRA 12:6)
(DIAGNOSIS)

SOLUN, N.S.

Second provincial conference of physicians specializing in laboratory work held in Saratov. Lab.delo 2 no.3:31-32 My-Je '56. (MLRA 9:10)
(MEDICINE--CONGRESSES)

SOLUN, M.S. (Saratov)

Development of laboratory services in Saratov Province under Soviet rule. Lab.delo 3 no.5:6-8 S-O '57. (MIRA 11:2)
(SARATOV--MEDICAL LABORATORIES)

BYREYEV, P.A., prof.; VARSHAMOV, L.A., prof.; VOLYNSKIY, B.G., dotsent; GERASIMOV, N.V., dotsent; GUREVICH, L.I., dotsent; ZHELYABOVSKIY, G.M., prof.; KARTASHOV, P.P., prof.; KOCHETOV, K.P., dotsent; KRUGLOV, A.N., prof.; KUTANIN, M.P., prof.; LARINA, V.S., dotsent; LOBKO, I.S., doktor [deceased]; LUKOVA, A.I., prof.; MAKHLIN, Ye.Yu., prof.; NAUMOV, A.I., kand.med.nauk; POPOV'YAN, I.M., prof.; SOLUN, N.S., kand.med.nauk; TARABUKHIN, M.M., dotsent; TRET'YAKOV, K.N., prof.; TRISHINA, A.A., kand.med.nauk; UL'YANOVA, A.V., dotsent; FAYN, A.E., kand.med.nauk; FAKTOROVICH, A.M., dotsent; FRANKFURT, A.I., prof.; FISHER, L.I., dotsent; CHASOVNIKOVA, Ye.P., kand.med. nauk; SHAMARIN, P.I., prof.; SHAPIRO, M.Ya., dotsent; SHVARTS, L.S., prof.; SHUSTERMAN, I.B., dotsent; FOY, A.M., prof.; FREYDMAN, S.L., kand.med.nauk; NIKITIN, B.A., dotsent, red.; AFANAS'YEV, I.A., red.; LUKASHEVICH, V., tekhn.red.

[Concise medical reference book] Kratkii terapevticheskii spravochnik. Izd.3., ispr. i dop. Saratov, Saratovskoe knizhnoe izd-vo, 1959. 919 p. (MIRA 13:7)

1. Chlen-korrespondent AMN SSSR (for Tret'yakov).
(MEDICINE--HANDBOOKS, MANUALS, ETC.)

SOLUN, N.S.

Anniversary of the establishment of courses for the training of medical technicians. Lab. delo 5 no.3:61 My-Je '59. (MIRA 12:6)
(SARATOV PROVINCE--MEDICAL TECHNOLOGISTS)

SOLUN, N.S.; LUNTS, A.M.

Role of the clinical and diagnostic laboratories in the investigation of some problems of regional pathology. Lab.delo 5 no.4:33-35 Jl-Ag '59. (MIRA 12:12)

1. Iz Oblastnoy konsul'tativnoy poliklinik Saratovskogo oblastnogo otdela zdravookhraneniya (glavnyy vrach Z.I. Krasovskaya).
(MEDICAL GEOGRAPHY)

SOLUN, N.S.

Conference of laboratory workers of Saratov Province. Lab. delo 8 no.2:62 F '62. (MIRA 15:2)
(SARATOV PROVINCE--MEDICAL LABORATORIES)

SOLUN, N.S.; RUBIN, V.I.

Organization of laboratory work in Saratov Province. Lab. delo 8 no.3:62 Mr '62. (MIRA 15:5)
(SARATOV PROVINCE--MEDICAL LABORATORIES)

SOLUN, N.S.; FEFER, M.I.

Leucopenia in polyclinical patients. Probl. gemat. i perel. krovi 8 no.7:57-58 Jl '63. (MIRA 17:10)

1. Iz Saratovskoy oblastnoy konsul'tativnoy poliklinik No.2.

SMIRNOVA, L.G., prof.; SOLUN, N.S.; GANCHEVA, I.T.

Brief news. Lab.delo 8 [i.e.9] no.1: 60-61 Ja '63. (MIRA 16:5)

(MEDICINE)

SOLUN, ..N.; SOLUN, N.S.

In memory of Iraida Trofimovna Ganicheva, 1903 - ; Lab. delo no.2: 193 '65. (MIRA 18:2)

VYALOV, O.S.; SOLUN, V.I.

Gasteropods of the Fergana Paleogene. Vop.paleont. 1:103-133 '50.
(Fergana--Gasteropoda, Fossil)

SOLUN, V.I.

Comparison of the Rishtan stage of Fergana and the Tajik Depression. Geol.sbor.[Lwov] no.1:148-153 '54. (MLRA 10:1)

1. Tadzhikskoye geologicheskoy upravleniye, Stalinabad. (Fergana--Geology, Stratigraphic) (Tajik Depression--Geology, Stratigraphic)

SOLUN, V. I.

Concerning the extent of the Bokhara horizon in the Tajik Depression. Vest. Len. un. 9 no.10:115-118 O '54. (MLRA 8:7)
(Tajik Depression--Geology, Stratigraphic)

SOLUN, V.I.

Tectonic structure of the Yak-Su Depression. Izv.Otd.est. nauk AN Tadzh.SSR no.2:29-40 '58. (MIRA 13:4)

1. Upravleniye geologii i okhrany nedr pri Sovete Ministrov Tadzhikskoy SSR i Leningradskiy gosudarstvennyy universitet.
(Yak-Su Valley--Geology, Structural)

AUTHOR: Solun, V. I. SOV/20-121-4-39/54

TITLE: Marine Paleogenic Deposits in the South-East of Turkmenia (Morskiye paleogenovyye otlozheniya yugo-vostochnoy Turkmenii)

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol. 121, Nr 4, pp. 716 - 719 (USSR)

ABSTRACT: These deposits were investigated with varying exactness (Refs 1-10). Since 1956 comprehensive investigations of the mentioned strata have been carried out by the Sredne-Aziyatskaya ekspeditsiya VSEGEI (Central Asiatic Expedition) and the Turkmenskoye Geolupravleniye (Turkmenia Geological Board of Administration) under the supervision of the author. It became possible to suggest a scheme of the Paleogenic division (Table 1) more detailed than that of O.S.Vyalov (Refs 6-8); namely:Bukharskiy stage consisting of 3 parts; Suzakskiy stage; Alayskiy stage with 3 suites and 1 effusive packet; Turkestanskiy stage with 3 suites and 3 effusive packets. Summing up the following new findings may be stressed: 1) the above mentioned scheme; 2) the changes on the surface of the cross-section and their characteristic features were rendered

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more precise; 3) the investigation of individual cross-sections with respect to their ages was corrected considerably and carried out more detailed; 4) in the rocks of the Bukharskiy stage numerous types of mollusks of the Karatagskiy complex were found and determined; 5) it happened for the first time in Central Asia (Srednyaya Aziya) that nummulites were found in the Suzakskiye sediments. Together with the macrofauna they may be regarded as formed in the Lower Eocene; 6) V.N.Ognev's opinion that the Kushkinskiy and Chokmaklinskiy effusive packets were formed in different periods was rehabilitated; 7) an interruption showing erosion traces between the Alayskiy and Turkestanskiy stages was proved. There are 1 table and 11 references, 11 of which are Soviet.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy geologicheskiy institut (All-Union Geological Scientific Research Institute)

PRESENTED: April 5, 1958, by S.I. Mironov, Member, AS USSR

SUBMITTED: April 5, 1958

SOLUN, V.I.

Stratigraphy of Tertiary sediments in the Tajik Depression. Uch. zap.LGU no.268:208-219 '58. (MIRA 12:6)
(Tajik Depression--Geology, Stratigraphic)

SOLUN, V.I.

Position in the section of the Paleogene in Badkhyz of the Kushka and Chakmaklinskaya volcanic benches. Trudy VSEGEI 46:271-273 '61. (MIRA 14:11)
(Turkmenistan--Geology, Stratigraphic) (Mollusks, Fossil)

SOLUN, V.I.

Paleogene of the Karabil' Upland. Trudy VSEGEI 46:280-281 '61.
(MIRA 14:11)
(Turkmenistan--Paleontology, Stratigraphic)

Stage division scale of the Paleogene sediments in the U.S.S.R.
Vest. IGU 19 no.18:5-15 '64. (MIRA 17:12)

SOLUN, Ye. N., Cand Med Sci -- (diss) "Problem of ~~the~~ immunological reactivity ~~of~~ experimental reflexogenic hypertension." Saratov, 1957. 10 pp (Saratov State Med Inst), 300 copies (KL, 1-58, 122)

T-5

USSR/Human and Animal Physiology. Circulation

Abs Jour : Ref Zhur - Biol., No 14, 1958, No 65274

Author : Solun E.N.
Inst : ~~The Saratov~~ Medical Institute
Title : Certain Problems Related to Immunological Reactivity in Experimental Reflexogenic Hypertension.

Orig Pub : Tr. Saratovsk. med. in-ta, 1957, 9, 42-47

Abstract : Rabbits were immunized with a three-stage intravenous injection of a mixture of a 25% suspension of sheep erythrocytes and tetravaccine. The antibody titer and the phagocytic activity of the leukocytes was determined at various periods following vaccination (10 days-3½ months). If hypertension is produced by denervation of the arch of the aorta and the carotid sinus after the conclusion of the vaccinations, a considerable reduction in immunogenesis was noted; the antibody titer fell markedly, while the phagocytic activity of the leukocytes was almost unchanged. The author explains the decrease in immunological activity by the stimulation

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NOVORASOVA, P.Ya.; SOLUN, Ye.N.

Influence of cytotoxins on the origin and development of the experimental tumor M-1 in white rats. Preliminary report. Trudy Sar. gos. med. inst. 26:81-83 '59. (MIRA 14:2)

1. Saratovskiy meditsinskiy institut, kafedra patologicheskoy fiziologii (zav. - dotsent P.Ya. Novorasova).
(SERUM THERAPY) (TUMORS)

NOVORASOVA, P.Ya.; FEYGEL'SON, A.S.; SOLUN, Ye.N.

Influence of polyvalent and specific anticancerous sera on the development of malignant turmors in experimental animals. Trudy Sar. gos. med. inst. 26:84-88 '59. (MIRA 14:2)

1. Saratovskiy meditsinskiy institut, kafedra patologicheskoy fiziologii (zav. -dotsent P.Ya. Novorasova).
(SERUM THERAPY) (CANCER)

SOLIN, V...; CHUYKOV, Yu.P.

Comparison of Paleogene sediments in Badakhyz, the Gaurdak region, the southern part of the Tajik Depression, and the northern foothills of the Hindu Kush. Trudy VSEGEI 102:272-294 '64. (MIRA 18:2)

DEVYATNIN, V.A.; SOLUNINA, I.A.

Stabilization of vitamin A. Trudy VNIVI 6:122-128 '59.
(MIRA 13:7)
1. Vsesoyuznyy nauchno-issledovatel'skiy vitaminnyy institut. Khimiko-analiticheskaya laboratoriya.
(VITAMINS--A) (ANTIOXIDANTS)

DEVYATNIN, V.A.; SOLUNINA, I.A.

Determining tocopherols in vegetable oils. Med. prom. 13 no.2: 38-42 F '59. (MIRA 12:3)

1. Vsesoyuznyy nauchno-issledovatel'skiy vitaminnyy institut.
(OILS AND FATS--ANALYSIS)
(TOCOPHEROLS)

DEVYATNIN, V.A.; NIKOFOROVA, V.V.; SOLUNINA, I.A.

Accelerated method of determining the quality of Na-α-ozymethylene-β-ethoxypropionitrile. Med. prom. 14 no.7:44-47 Je '60. (MIRA 13:8)

1. Vsesoyuznyy nauchno-issledovatel'skiy vitaminnyy institut.
(PROPIONITRILE)

DEVYATNIN, V.A.; SOLUNINA, I.A.; FEDOROVA, G.A.; MEL'NIKOVA, Ye.Ya.; SAMSONOVA, G.S.; ZHELTOVA, I.S.

Vitamin loss in cooking. Trudy VNIVI 8:93-96 '61. (MIRA 14:9)

1. Khimiko-analiticheskaya laboratoriya Vsesoyuznogo nauchno-issledovatel'skogo vitaminnogo instituta.
(Vitamins)

DEVYATNIN, V.A.; NIKIFOROVA, V.V.; SOLUNINA, I.A.

Colorimetric method of determining Na-α-oxymethylene -β- ethoxypropionitrile. Trudy VNIVI 8:97 '61. (MIRA 14:9)

1. Khimiko-analiticheskaya laboratoriya Vsesoyuznogo nauchno-issledovatel'skogo vitaminnogo instituta.
(Colorimetry) (Nitriles)

SOLUNINA, I.A.; SOROKINA, R.A.; DEVYATIN, V.A.

Determination of 3-methyl-2-penten-4-yn-1-ol in the presence of 3-methyl-1-penten-4-yn-3-ol. Med.prom. 15 no.5:60-61 My '61. (MIRA 14:6)

1. Vsesoyuznyy nauchno-issledovatel'skiy vitaminyy institut. (PENTENYNOL)

DEVYATNIN, V.A.; SOLUNINA, I.A.; KUZNETSOVA, I.A.

Adsorption method for determing ergocalciferol in irradiated ergosterol solutions. Med.prom. 16 no.4:30-33 Ap '62. (MIRA 15:8)

1. Vsesoyuznyy nauchno-issledovatel'skiy vitaminnyy institut.
(ERGOSTEROL) (ERGOCALCIFEROL)

SOLOMINA, I.A., DEVYATNIN, V.A.

Polarographic method of determining vitamin A in industrial preparations. Prikl. biokhim. i mikrobiol. 1 no.5:544-548 S-O '65. (MIRA 18:11)

1. Vsesoyuznyy nauchno-issledovatel'skiy vitaminnyy institut.

SOLUNS'KA, N.I.

Prognosis of the development of Cercospora infection of sugar beets. Mikrobiol.zhur. 14 no.4:70-78 '52. (MLRA 6:11)

1. Z Vsesoyuznogo naukovo-doslidnogo institutu tsukrovogo buryaka.
(Sugar beets--Diseases and pests)

S/0181/64/006/001/0029/0034

ACCESSION NR: AP4011733

AUTHORS: Geguzin, Ya. Ye.; Solunskiy, V. I.

TITLE: Discharge of excessive vacancies in the diffusion band

SOURCE: Fizika tverdogo tela, v. 6, no. 1, 1964, 29-34

TOPIC TAGS: vacancy discharge, excess vacancy, diffusion band, semiconductor, internal discharge, external discharge, diffusion pair, pore, vacancy saturation, dislocation, trapping coefficient

ABSTRACT: In the diffusion band of laminated samples made up of two mutually soluble substances in contact along a plane (or in the surface layer of samples from which the volatile component has been removed) excess vacancies arise during diffusion. The authors have examined the relative role of internal and external discharge of vacancies in the diffusion band. They have shown that in the early stages of the process a dominant role is played by external discharge (the interface of a diffusion pair) and at later stages by inner discharge (the pores). In the later stages saturation of vacancies declines in the diffusion band. An experiment

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ACCESSION NR: AP4011733

on the system KCl-KBr has shown that the role of dislocations as possible discharging agents of excess vacancies at the investigated stage is small. This apparently signifies a low "trapping coefficient" of vacancies on encounters with dislocations. Orig. art. has: 3 figures and 20 formulas.

ASSOCIATION: Khar'kovskiy gosudarstvenny*y universitet (Kharkov State University)

SUBMITTED: 19Jun63 DATE ACQ: 14Feb64 ENCL: 00

SUB CODE: PH NO REF SOV: 005 OTHER: 004

Card 2/2

ACCESSION NR: AP4013411 S/0057/64/034/002/0262/0265

AUTHOR: Solunskiy, V.I.; Timan, B.L.

TITLE: Volume recombination and ambipolar diffusion in a gas discharge plasma

SOURCE: Zhurnal tekhn.fiz.,v.34, no.2, 1964, 262-265

TOPIC TAGS: plasma, gas discharge, gas discharge plasma, ambipolar diffusion, volume recombination, electron loss

ABSTRACT: The radial distribution of electrons in a gas discharge in a cylindrical chamber is calculated with volume recombination as well as ambipolar diffusion taken into account. The differential equation for the electron density, n, is nonlinear because of the term in n^2 due to volume recombination. A power series in the square of the radial coordinate is substituted for n and a recursion formula is derived for the coefficients. Inserting the boundary condition that the density vanish on the wall of the chamber leads to a relation between the ionization coefficient, z, the recombination coefficient, b, the ambipolar diffusion coefficient, D, the discharge tube radius, R, and the axial electron density, n_0. This relation is approximated for b not too large, and it is put into a form suitable for computa-

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ACCESSION NR: AP4013411

tion. For b = 0, this relation reduces, as it must, to Shottky's equation $J_0(\sqrt{zR^2/D}) = 0$. An approximation to the relation obtained is $n_0 = (z-5.76D/R^2)/$ /0.67b. The ratio of the rate of loss of electrons due to volume recombination to that due to ambipolar diffusion is found to be approximately $0.11bR^2n_0/D$, Orig. art.has: 12 formulas and 1 table.

ASSOCIATION: none

SUBMITTED: 28May62 DATE ACQ: 26Feb64 ENCL: 00

SUB CODE: PH NR REF SOV: 003 OTHER: 001

Card 2/2

GEGUZIN, Ya.Ye.; KOLUBAYEV, V.I.; KAGANOVSKIY, Yu.S.

Mechanism and kinetics of the growth of negative crystals (pores) during interdiffusion in alkali metal halide single crystals of the system KCl - KBr. Kristallografiia 9 no.2:248-254 Mr-Ap'64. (MIRA 17:5)

1. Khar'kovskiy gosudarstvennyy universitet imeni Gor'kogo.

GEGUZIN, Ya.Ye.; SOLNSKIY, V.I.

Growth of negative crystals (pores) in the diffusion zone during mutual diffusion in alkali halide single crystals. Kristallografiia 9 no.4:577-578 Jl-Ag '64.
(MIRA 17:11)

1. Khar'kovskiy gosudarstvennyy universitet.

SOLUNSKIY, V.I.

Possibility of redistributing excess vacancies in the diffusion zone. Fiz. met. i metallored. 18 no.4:590-593 O '64. (MIRA 18:4)

1. Khar'kovskiy gosudarstvennyy universitet imeni Gor'kogo.

GEGUZIN, Ya.Ye.; SOLUNSKIY, V.I.

Effect of the electric field on the development of porosity during mutual diffusion in singlealkali-halogen crystals. Dokl. AN SSSR 156 no. 3:644-646 '64. (MIRA 17:5)

1. Khar'kovskiy gosudarstvennyy universitet im. A.M.Gor'kogo. Predstavleno akademikom P.A.Rebinderom.

L 4906[illegible] EEC(t)-2/EWA(c)/EWA(l)/EWT(m)/EWP(b)/T/EWP(t) Pt-4 IJP(c) GG/JD/JG

ACCESSION NR: AP5006885 S/0181/65/007/003/0802/0810

AUTHOR: Geguzin, Ya. Ye.; Solunskiy, V. I.; Reznik, L. M.

TITLE: On the phenomenon of "vacancy breakdown" during mutual diffusion in alkali-halide single crystals

SOURCE: Fizika tverdogo tela, v. 7, no. 3, 1965, 802-810

TOPIC TAGS: alkali halide, single crystal, mutual diffusion, diffusion porosity, vacancy breakdown

ABSTRACT: This is a continuation of earlier experiments on the mutual diffusion in alkali-halide single crystals (Kristallografiya v. 9, 248, 1964) and presents the results of an investigation of the influence of an external electric field on the mechanism and kinetics of occurrence of diffusion porosity in connection with the dislocation structure of real crystals. The systems investigated were KCl-KBr and NaCl-NaBr. The preparation of the samples and the test procedure are described. The studies of the mutual diffusion in these systems have shown that chains of pores are initiated in the diffusion zone and can develop with preferred orientation along the applied field. In samples with the contact made along the (100) plane needle-like pores were produced perpendicular to the plane of the contact

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L 49049-65
ACCESSION NR: AP5006885

(i.e., parallel to the field). The lengths of the needles varied in different sections of the diffusion zone. When the samples were in contact along the (110) plane, the type of pore structure depended on the field applied. A phenomenological description of this phenomenon, called "vacancy breakdown," is proposed to explain this phenomenon. A similarity is found between the formation of the pore chains and the arrangement of nuclei of electric breakdown in crystals. A distinguishing feature of the kinetics of this process is that repeated heating and cooling cycles do not cause lengthening of already existing chains, although new chains are produced. Orig. art. has: 9 figures and 5 formulas.

ASSOCIATION: Khar'kovskiy gosudarstvennyy universitet im. A. M. Gor'kogo (Khar'kov State University)

SUBMITTED: 05Sep64 ENCL: 00 SUB CODE: SS

NR REF SOV: 003 OTHER: 002

Card 2/2 CC

GEGUZIN, Ya.Ye., GOLUNSKIY, Ye.L., KRIVNIK, I.M.

The "vacancy breakdown" phenomenon during mutual diffusion in alkali halide single crystals. Fiz. tver. tela 7 no.3:802-810 Mr. '65. (MIRA 18:4)

1. Khar'kovskiy gosudarstvennyy universitet imeni Gor'kogo.

L 30198-66 EWT(m)/T/EWP(t)/ETI IJP(c) JD/JG
ACC NR: AP6012516 SOURCE CODE: UR/0181/66/008/004/1304/1306

AUTHORS: Geguzin, Ya. Ye.; Solunskiy, V. I.; Boyko, Yu. I. 54 B

ORG: Khar'kov State University im. A. M. Gor'kiy (Khar'kovskiy gosudarstvennyy universitet)

TITLE: Mutual diffusion in KCl-KBr single crystals in a constant external electric field

SOURCE: Fizika tverdogo tela, v. 8, no. 4, 1966, 1304-1306

TOPIC TAGS: potassium chloride, potassium bromide, sandwich structure, physical diffusion, electric field, crystal vacancy

ABSTRACT: This is a continuation of earlier work by the authors (DAN SSSR v. 160, 317, 1965 and v. 156, 644, 1964). The experiments consisted of annealing a sandwich structure KCl-KBr-KCl at temperatures 530, 580, 620, 650, and 680C in a constant electric external field. The field intensity varied from 10 to 150 v/cm, with the field vector perpendicular to the plane of contact between the single-crystal plates. A slight pressure was applied to eliminate the porosity due to diffusion. The concentration distribution was determined by removal of layers followed by determination of the crystal lattice parameter with the aid of a diffractometer (URS-50). The results showed that the external electric

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L 30198-66
ACC NR: AP6012516

field shifts the concentration curve somewhat and deforms it slightly. The experimental data can be used to determine the effective coefficient of chemical diffusion in two ways: from the concentration distribution curve and from the shift of the concentration curve obtained in experiments without application of the field and from the shift due to the field. An important result of the comparison of the diffusion coefficients is that the ratio of the coefficient without and with field increases with increasing temperature. This indicates that some of the vacancies are electrically neutral. This may also explain the reason why the concentration curve shifts more towards the KCl than the KBr. Orig. art. has: 2 figures and 3 formulas.

SUB CODE: 20/ SUBM DATE: 22Nov65/ ORIG REF: 003/ OTH REF: 002

Card 2/2

SOLUYAN, S.I.; KHOKHLOV, R.V.

Propagation of acoustic waves of finite amplitude in a dissipative medium. Vest. Mosk. un. Ser. 3: Fiz., astron. 16 no.3:52-61 My-Je '61. (MIRA 14:7)

1. Kafedra teorii kolebaniy Moskovskogo gosudarstvennogo universiteta.

(Sound waves)

27199

S/056/61/041/002/021/028
B111/B212

26.2311

AUTHORS: Soluyan, S. I., Khokhlov, R. V.

TITLE: Theory of simple magnetohydrodynamic waves with a finite amplitude in a dissipative medium

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 41, no. 2, 1961, 534-543

TEXT: The fundamental magnetohydrodynamic equations are simplified for small initial perturbations and small energy dissipation. The following set of equations is found:

$$\partial v_x/\partial x - \alpha v_x \partial v_x/\partial \tau = \delta \partial^2 v_x/\partial \tau^2, \quad (13),$$

$$\alpha = \frac{1}{2u_{1,2}^2}\left\{(\gamma+1) + \frac{(2-\gamma)(u_{1,2}^2-u_0^2)^2}{(u_{1,2}^2-u_0^2)^2 + H_y^2 u_0^2/4\pi\rho_0}\right\}, \quad (14).$$

$$\delta = \left\{(u_{1,2}^2-u_0^2)^2(\eta+\beta\rho_0) - (u_{1,2}^2-u_0^2)\frac{H_y^2}{4\pi\rho_0}\eta + \right.$$

$$\left. + \frac{H_y^2}{4\pi\rho_0}\left[u_0^2\frac{\gamma-1}{\gamma}\frac{\varkappa}{c_v} + u_{1,2}^2\left(\frac{4}{3}\eta+\zeta\right)\right]\right\}\left\{2\rho_0 u_{1,2}\left[(u_{1,2}^2-u_0^2)^2 + \frac{H_y^2}{4\pi\rho_0}u_0^2\right]\right\}^{-1}. \quad (15).$$

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Theory of simple magnetohydrodynamic...

Waves are considered, for which the velocity, density, pressure, and magnetic field strength are not simply a function of $(t - x/u_{1,2})$ but a function of any combination of x, t. A study of (13) makes it possible to investigate the propagation of waves having various initial shapes. The expression (13) is transformed into an equation of the heat-conduction type by the substitution $v_x = \frac{2\delta}{\alpha W} \cdot \frac{\partial W}{\partial \tau}$ with $\tau = t - x/u_{1,2}$. It is solved for the following three boundary conditions: 1) $v_x = v_{ox} \text{th}\tau/\tau_o$ with $\tau_o \gg (\alpha v_{ox}/(2\delta))^{-1}$; $\alpha v_{ox}/(2w\delta) = \text{Re}$ (magneto-hydrodynamic Reynolds number $\gg$:). From the solution for v_x the width of the shock wave L_Φ is calculated to be

$$L_\Phi = u_{1,2}\tau' = 2\frac{u_{1,2}}{v_{ox}}\left\{(u_{1,2}^2 - u_0^2)^2[\eta + \beta\rho_0] - (u_{1,2}^2 - u_0^2)\frac{H_y^2}{4\pi\rho_0}\eta + \right.$$
$$\left. + \frac{H_y^2}{4\pi\rho_0}\left[u_0^2\frac{\gamma - 1}{\gamma}\frac{x}{c_o} + u_{1,2}^2\left(\frac{4}{3}\eta + \zeta\right)\right]\right\} \times$$
$$\times \left\{\rho_0 u_{1,2}\left[(\gamma + 1)\frac{H_y^2}{4\pi\rho_0}u_0^2 + 3(u_{1,2}^2 - u_0^2)^2\right]\right\}^{-1}. \qquad (21).$$

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Theory of simple magnetohydrodynamic...

2) $v_x = \begin{cases} -v_{ox} & -\infty \leq \tau \leq 0 \\ +v_{ox} & 0 \leq \tau \leq \infty \end{cases}$; $L_\Phi = 2u_{1,2}\sqrt{\delta x}$.

3) $v_x = \begin{cases} 2P_{ox}\beta^{-1}(1 - \tau/\beta) & 0 \leq \tau \leq \beta \\ 0 & \tau < 0;\ \tau > \beta \end{cases}$ $P_{ox} = \int_0^\beta v_{ox}(1 - \tau/\beta)d\tau$;

$[0,\beta]$ - interval. The solution for v_x is represented graphically. In general, it has been found that: 1) if a discontinuity is missing in the origin (x=0, y=0), it may occur at a distance x_1 (proportional to 1/M) from the origin; 2) a discontinuity in the origin will be blurred according to $\tau_\Phi = 2\sqrt{\delta x}$ and will reach a width of 1/Re at a distance $x_1 = 2\delta/(\alpha v_{ox})^2$. This blurring of the front occurs only if the quantity 1/Re represents a stationary front width; 3) the amplitude at a distance $x_2 \sim Re/M$ is not a function of the initial amplitude and the process of wave propagation in the range $x > x_2$ can be described by linear magnetohydrodynamic equations.

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27199 S/056/61/04 /002/021/028
Theory of simple magnetohydrodynamic... B111/B212

Ye. P. Sirotina and S. I. Syrovatskiy (Ref. 6: ZhETF, 39, 746, 1960) are mentioned. There are 2 figures and 9 references: 7 Soviet and 2 non-Soviet. The two references to English-language publications read as follows: Ref. 1: D. Bazer. Astro phys. J., 128, 686, 1958; Ref. 2: P. Lax, Comm. Pure Appl. Math., 10, 537, 1957.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet (Moscow State University)

SUBMITTED: March 8, 1961

Card 4/4

SOLUYAN, S. I.

"Non-linear theory of spherical and cylindrical acoustic waves in the viscous heat-conducting"

report submitted for the 4th Intl. Congress of Acoustics, Copenhagen, Denmark, 21-28 Aug 1962.

40074
S/188/62/000/004/007/010
B108/B102

AUTHORS: Naugol'nykh, K. A., Soluyan, S. I., Khokhlov, R. V.

TITLE: Cylindrical waves of finite amplitude in a dissipative medium

PERIODICAL: Moscow. Universitet. Vestnik. Seriya III. Fizika, astronomiya, no. 4, 1962, 65 - 71

TEXT: The propagation of cylindrical waves in a viscous, heat conducting medium is examined through approximation techniques. Starting from the usual equations of motion, continuity, and state the solutions are got by two different methods: that of Krylov and Bogolyubov (Asimptoticheskiye metody v teorii nelineynykh kolebaniy (Asymptotic methods in the theory of nonlinear oscillations), GITTL, M., 1955) for slight distortion of the wave (small Reynolds number) and that proposed by Soluyan and Khokhlov ("Vestn. Mosk. un-ta", ser. fiz., astronomii, no. 3, 52 - 61, 1961) for large Reynolds numbers. Calculations are restricted to second order terms. The formation and "resorption" of shock wave fronts is examined. A divergent wave with a sinusoidal profile will, after a definite distance, turn into a sawtooth wave which then collapses and again forms a sinusoidal

Card 1/2

33262
S/046/62/008/001/011/018
B125/B102

AU 1200 (1044, 1047, 1227)

AUTHORS: Polyakova, A. L., Soluyan, S. I., Khokhlov, R. V.

TITLE: Propagation of finite interferences in a relaxing medium

PERIODICAL: Akusticheskiy zhurnal, v. 8, no. 1, 1962, 107 - 112

TEXT: The generalized equations of gas dynamics for relaxing media derived for steady state flows are valid in the case of small Mach numbers and low energy dispersion in the medium. Motion in relaxing media is completely described by the continuity equation, the equation of state $p = p(\varrho, S, \xi)$ (1) and the reaction equation $d\xi/dt = -(\xi - \xi_0)/\tau$ where p denotes the pressure, ϱ the density, S the entropy, τ the relaxation time, ξ a parameter which characterizes the internal state of the substance and ξ_0 the equilibrium value of ξ. The values of v/c, $(\varrho - \varrho_0)/\varrho_0$ and $(\xi - \xi_0)/\xi_0$ (3) and $m = (c_\infty^2 - c_0^2)/c_0^2$ are in the order of μ since the studies are limited to media with a small velocity of sound dispersion. The present problem can be treated either in Euler or

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Propagation of finite...

Lagrange's variables. The system of equations consisting of

$$\frac{dp}{dt}-\left[c_\infty^2+\left(\frac{\partial^2 p}{\partial \rho^2}\right)_{\xi_0}\rho'\right]\frac{d\rho}{dt}+\frac{1}{\tau}\left[p-p_0-c_0^2\rho'-\frac{1}{2}\left(\frac{\partial^2 p}{\partial \rho^2}\right)_{\xi_0}\rho'^2\right]=0 \qquad (8)$$

and the continuity equation $\varrho = \varrho_0(\partial a/\partial x)$ (10), $(\partial v/\partial t) + (1/\varrho_0)(\partial p/\partial a)=0$ (11) describes the propagation of interferences of finite amplitudes in a relaxing medium. After various substitutions the system is reduced to equation

$$\mu\frac{\partial v}{\partial z}-\frac{\varepsilon}{c_0^3}v\frac{\partial v}{\partial y}-\frac{m\tau}{2c_0}\frac{\partial^3 v}{\partial y^3}+\tau\frac{\partial}{\partial y}\left(\mu\frac{\partial v}{\partial z}-\frac{\varepsilon}{c_0^3}v\frac{\partial v}{\partial y}\right)=0 \qquad (14).$$

Its general form cannot be integrated. The coordinate of a fixed particle belonging to the medium in equilibrium is used as a Lagrange coordinate a. In Euler's coordinates the pressure can be eliminated and the continuity equation and equation of motion in a second approximation read as follows:

$$\mu\frac{\partial v}{\partial z}+\frac{1}{c_0}\left(1+\frac{\rho'}{\rho_0}\right)\frac{\partial v}{\partial y}+\frac{1}{\rho_0}\left(1-\frac{v}{c_0}\right)\frac{\partial \rho'}{\partial y}=0, \qquad (15)$$

$$\mu\frac{\partial \rho'}{\partial z}+\frac{\rho_0}{c_0^2}\left(1-\frac{v}{c_0}\right)\frac{\partial v}{\partial y}-\frac{1}{c_0}\left[1-\frac{\rho'}{\rho_0}+\frac{2\rho_0}{c_0^2}\left(\frac{\partial^2 p}{\partial \rho^2}\right)_{\xi_0}\frac{\rho'}{\rho_0}\right]\frac{\partial \rho'}{\partial y}=\frac{B\tau}{c_0^3}\frac{\partial^2 \xi}{\partial y^2} \qquad (16),$$

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Propagation of finite...

suitable substitutions change it to

$$\mu \frac{\partial v}{\partial z} - \frac{\varepsilon}{c_0^3} v \frac{\partial v}{\partial y} = - \frac{B\tau}{2\rho_0 c_0^3} \frac{\partial^2 \xi}{\partial y^2}, \qquad (20).$$

The relation $v/c_0 = \varrho'/\varrho_0$ of the linear acoustics is extended by quadratic terms and terms governed by internal degrees of freedom which are proportional to $\partial\xi/\partial y$. (20) and the reaction equation $\tau(d\xi/dy) + \xi = -m\varrho_0 c_0 v/B$ (21) written in the new coordinates $z = \mu x$, $y = t - x/c_0$ completely describe the propagation of interferences of finite amplitudes in a relaxing medium. v(y) is shown in Fig. 1: a) the case $k \gg 1$ corresponds to relatively weak nonlinear effects. b) At $k > 1$ the shape of the shock wave becomes unsymmetrically with respect to the center level, c) at $k > 1$ v(y) becomes theoretically ambiguous; this corresponds to a nonsteady real function. The compression jump can be described with a parameter which is proportional to the shear viscosity parameter δ by $\varrho \frac{d^2v}{dy^2} + \left(v + \frac{mc_0}{2\varepsilon} + \frac{\delta}{\tau}\right) \frac{dv}{dy} + \frac{\varepsilon}{2\tau} (v^2 - v_0^2)$ (25). Substituting

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$w = dv/dy$ gives for the trajectories on the phase plane $\frac{dw}{dv} = -\frac{1}{\delta}\left(v + \frac{mc_0}{2t} + \frac{\delta}{\tau}\right)w + \frac{\varepsilon}{2\tau}(v^2 - v_0^2)$. A. V. Gaponov is thanked for the suggestion. There are 2 figures and 6 references: 5 Soviet and 1 non-Soviet. The reference to the English-language publication reads as follows: J. S. Mendousse. Nonlinear dissipative distortion of progressive sound waves at moderate amplitude, J. Acoust. Soc. America, 1953, 25, 1, 51 - 54.

ASSOCIATION: Akusticheskiy institut AN SSSR Moskva (Acoustics Institute of the AS USSR Moscow); Moskovskiy gosudarstvennyy universitet (Moscow State University)

SUBMITTED: May 17, 1961

S/046/62/008/002/011/016
B104/B138

AUTHORS: Soluyan, S. I., Khokhlov, R. V.

TITLE: Acoustic waves of finite amplitude in a medium with relaxation

PERIODICAL: Akusticheskiy zhurnal, v. 8, no. 2, 1962, 220 - 227

TEXT: With small Mach numbers and low energy dissipation the propagation of acoustic waves in a relaxing medium can be described approximately by the following system:

$$\frac{\partial v}{\partial z} - \frac{\varepsilon}{c_0^3} v \frac{\partial v}{\partial y} = -\frac{B\tau}{2\rho_0 c_0^3} \frac{\partial^2 \xi}{\partial y^2}, \quad (1)$$

$$\tau \frac{\partial \xi}{\partial y} + \xi = -\frac{m\rho_0 c_0}{B} v^2. \quad (2)$$

For $\omega\tau \ll 1$ the dispersion losses can be neglected and the system is reduced to $\partial v/\partial z - (\varepsilon/c_0^2) v \partial v/\partial y = 0$. $\omega y = \arcsin(v/v_0) - \frac{\xi\omega z}{c_0^2}(v/v_0)$ is the solution of this equation under the boundary conditions $z = 0$, $v = v_0 \sin\omega y$. This solution describes the distortion of the sinusoidal

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waves until discontinuities have formed. A discontinuity, e.g., is formed at z_1; z_1 is determined from the relation $\varepsilon\omega v_0 z_1/c_0^2 = 1$. The solutions of the system (1) - (2) in the region $\omega\tau \gg 1$ is obtained from the transformed system

$$\frac{\partial v}{\partial z} + \frac{\partial G}{\partial y} = 0, \quad G = -\frac{\varepsilon}{2c_0^3} v^2 + \frac{B\tau}{2\rho_0 c_0^2} \frac{\partial \xi}{\partial y}, \quad (8)$$

$$\tau \frac{\partial \xi}{\partial y} + \xi = -\frac{m p_0 c_0}{B} v. \quad (9)$$

$$v = \frac{v_0}{\left(1 + \frac{\varepsilon\omega v_0 z}{c_0^2}\right)} \left(-\omega y + \pi \operatorname{th} \frac{\omega y}{\Delta}\right), \quad (13)$$

where

$$\Delta = \frac{1 + \varepsilon\omega v_0 z/c_0^2}{\pi} \frac{1}{\varepsilon \mathrm{Re}}. \quad (14)$$

for the dimensionless width of the front. For relaxing media Re is analogous to the Reynolds number: $\mathrm{Re} = M/\omega\tau m$. It follows from (13) and (14) that at sufficiently large z distances, under the condition $\varepsilon\omega v_0 z_4/c_0^2 \simeq 4\varepsilon \mathrm{Re}$, the waves are again sinusoidal in first approximation. The amplitude is then $v = v_0/\varepsilon \mathrm{Re}$ and, at large Reynolds numbers, it is in-

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Acoustic waves of finite...

dependent of the initial amplitude. The propagation of acoustic waves is also studied for $0 < \omega t < \infty$. There are 3 figures.

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